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Two New Species of Water-Mites from Nikkô
National Park, Japan¹⁾

With 3 Text-figures

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ABSTRACT This paper embodies two new species of rheophilous water-mites in the torrent Onisawa in Nikkô National Park, Kantô District, Japan: *Sperchon* (*Palpisperchon*) *nikkoensis* n. sp. and *Testudacarus okadai* n. sp. This is the first record of the subgenus *Palpisperchon* from Japan.

Nikkô National Park is a mountainous area in the Kantô District, Japan, and located at about 130 km north of Tokyo. Mr. Yutaka Okada, former student of Ibaraki University, collected some water-mites (Hydrachnellae, Acari) from the torrent Onisawa at Shôbuga-Hama, about 1,400 m above sea level, Nikkô National Park, and put them at the author's disposal for research. The author found among them two new species of water-mites as described below:

Sperchontidae Thor, 1900

Sperchontinae Wolcott, 1905

1) *Sperchon* (*Palpisperchon*) *nikkoensis* n. sp.

Torrenticolidae Piersig, 1902

Testudacarinae Cook, 1974

2) *Testudacarus okadai* n. sp.

Descriptions of these two new species will be given in this paper. The specimens described in this paper are all deposited in the collection of the Department of Biology, Faculty of Science, Ibaraki University, Mito.

Sperchon (*Palpisperchon*) *nikkoensis* n. sp.²⁾

(Fig. 1)

Female (Holotype, Prep. No. 1818). Body oval in outline, measuring 800 μ long

1) Contribution No. 39 from the Itako Hydrobiological Station, Ibaraki University.

2) The specific name was given in connection with the type-locality.

and $670\ \mu$ wide. Interval between eyes $320\ \mu$. No median eye. Skin elastic and covered with small papillae, indicating also fine striations on both dorsum and venter as shown in Fig. 1, e. Glandularia on dorsum and venter rather large and raised conically as nipples.

Maxillary organ with conical rostrum and $220\ \mu$ long. Mandibles slender, and measured $246\ \mu$ long, including a stout claw. Palpi short and thick. P-II much bowed out on the outer margin, bearing on the ventral side at the distal end a spine

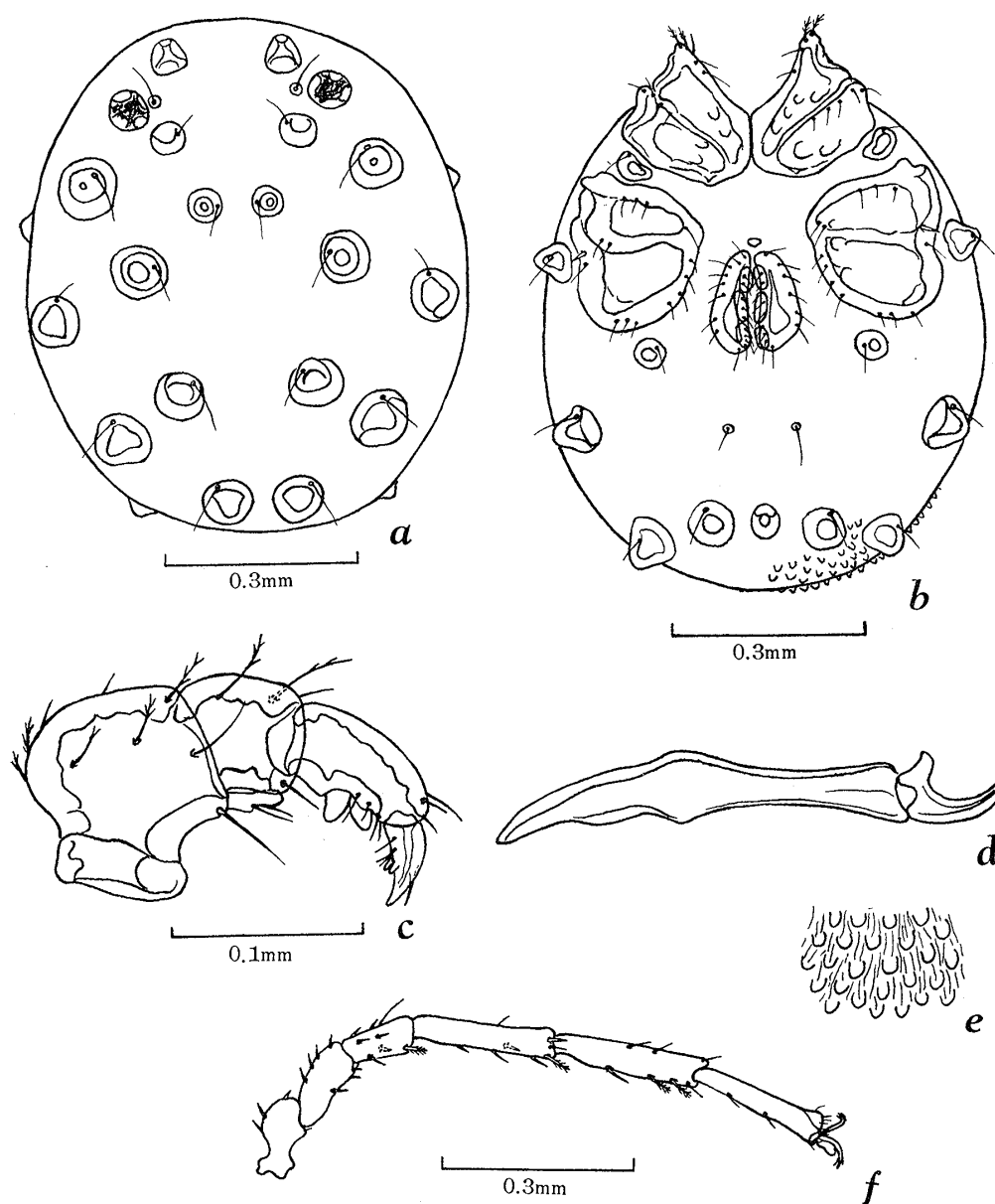


Fig. 1. *Sperchon (Palpisperchon) nikkoensis* n. sp., female: a, dorsum; b, venter; c, left palp; d, mandible; e, skin texture, dorsal middle portion; f, right IV leg.

and a stout process which bears two spines. P-IV shortened, bearing two greatly enlarged ventral peg-like setae which are located very close together. Some hairs on P-II and P-III are a little feathered on each distal portion as shown in Fig. 1, c. Epimeral area measuring $450\ \mu$ long and $560\ \mu$ wide in the widest portion, occupying the anterior half area of the venter. Palpal segments measured as shown in Table 1, in μ :

Table 1

	I	II	III	IV	V
Extensor surface	20	100	68	88	48
Height	68	96	60	48	20

Legs having no swimming hairs but many claw-shaped bristles. Legs measured in μ : L-I, 640; L-II, 744; L-III, 800; L-IV, 1008. Genital plates each measured $156\ \mu$ long and $64\ \mu$ wide.

Type-locality. One female was collected in the torrent Onisawa at Shôbuga-Hama, Nikkô National Park (water Temp., 9°C by Y. Okada) on June 26, 1973.

Remarks. Marshall (1933) reported *Sperchon crassipalpis* from stomachs of four species of trout collected by Dr. John W. Scott from Wyoming, North America. This North American *Sperchon* belongs to the subgenus *Palpisperchon* later established. The subgenus *Palpisperchon* was first recorded by Lundblad (1941) from a mountain stream in Burma as a new genus. Cook (1974) included *Palpisperchon* in the genus *Sperchon* as one of the subgenera. On the subgenus *Palpisperchon*, so far as the present author is aware, there are only two species hitherto described, as below: *Sperchon* (*P.*) *crassipalpis* Marshall, 1933, from Wyoming and *S.* (*P.*) *mirabilis* (Lundblad, 1941) from Burma.

This is the first record of the subgenus *Palpisperchon* from Japan. *Sperchon* (*P.*) *nikkoensis* n. sp. resembles the Burmese species, *mirabilis*, but is easily distinguished from it by larger nipple-shaped glandularia on dorsum and venter, and by having the skin feature which indicates fine striations together with small papillae as is shown in Fig. 1, e. This new species is considerably smaller in body size than that of the American species, *crassipalpis*. The male is not yet found.

Testudacarus okadai n. sp.³⁾

(Figs. 2-3)

Female (Holotype, Prep. No. 1819). Body oval, measuring $600\ \mu$ long, excluding the processes of the first epimera, $720\ \mu$ long, including the first epimera, and $456\ \mu$ wide. Interval between eyes $156\ \mu$. Dorsum with a large main plate and an antero-dorsal plate, seven pairs of lateral plates, and six pairs of glandularia

3) The specific name has been endowed in honour of Mr. Yutaka Okada who collected the specimens.

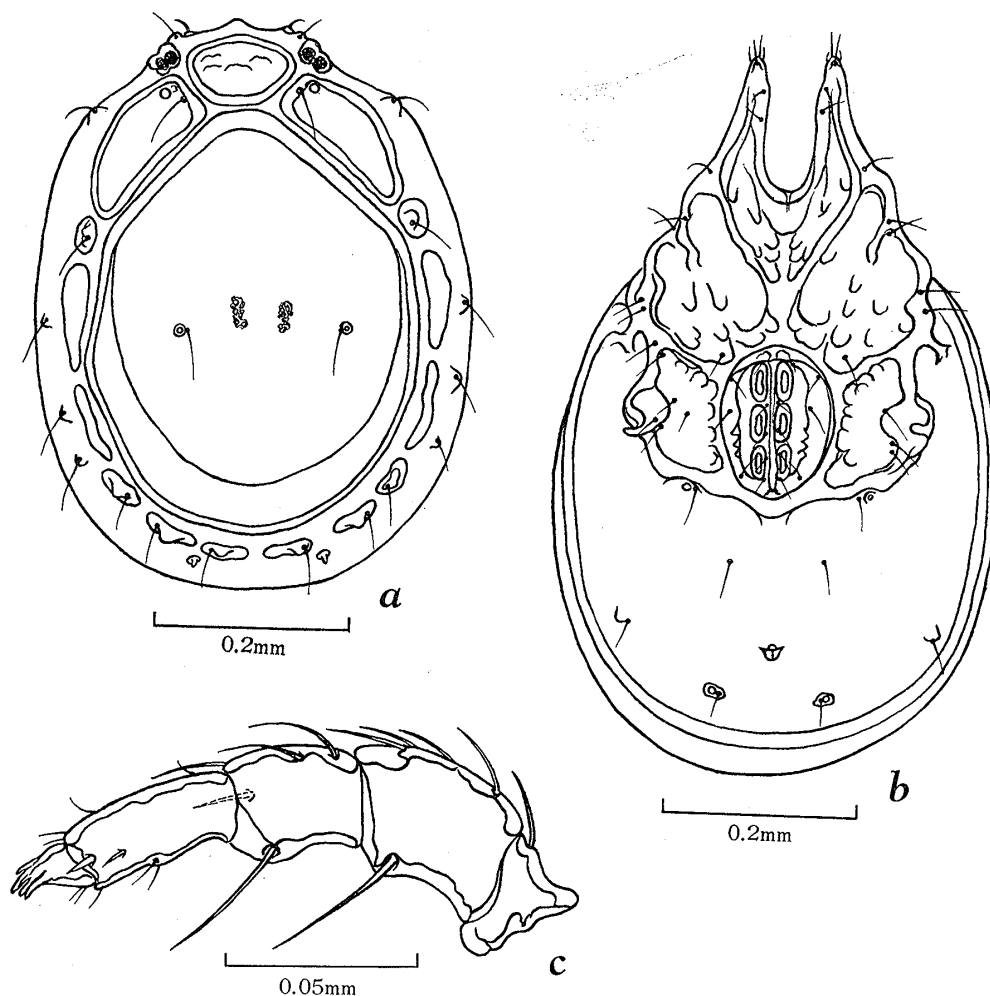


Fig. 2. *Testudacarus okadai* n. sp., female: a, dorsum; b, venter; c, left palp.

as shown in Fig. 2, a. Centro-dorsal main shield measuring $420\ \mu$ long and $340\ \mu$ wide, having a pair of glandularia on it.

Maxillary bay rather deep, measuring $135\ \mu$ long and $50\ \mu$ wide at the entrance. Maxillary palp small, measuring the segments as shown in Table 2, in μ :

Table 2

	I	II	III	IV	V
Extensor surface	25	48	39	46	15
Height	27	35	30	20	—

Mandibles $160\ \mu$ long, including a claw. Ventral surface occupied with the epimera in the anterior half area as shown in Fig. 2, b. Genital area oval in contour, measuring $138\ \mu$ long and $117\ \mu$ wide. The boundary lines between the second

and third epimera are not clear. Legs measured in μ : L-I, 360; L-II, 360; L-III, 445; L-IV, 708. Anus located on the ventral shield, a little forward to its posterior margin.

Male (Allotype, Prep. No. 1821). Body shape and organs closely resemble those of the female, excepting the body dimensions and the proportions of the epimeral occupation area in venter. Body smaller than in the female, measuring $480\ \mu$ long, excluding epimera, and $390\ \mu$ wide. Feature and shape of dorsal shields are all similar to those of the female. Venter occupied with epimera almost two-thirds of it. Anus located very near to the posterior body margin just outside of the ventral shield.

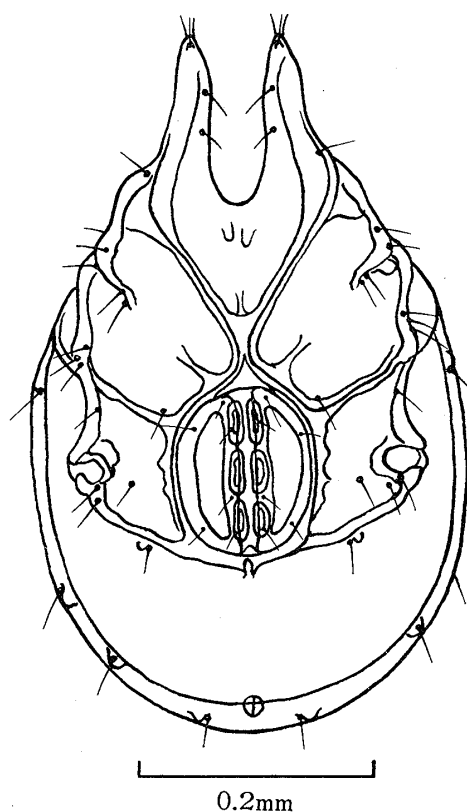


Fig. 3. *Testudacarus okadai* n. sp., male, venter.

Type-locality. One male and one female were collected in the torrent Onisawa (water Temp., 9°C and pH, 6.7 by Y. Okada) at Shôbuga-Hama, Nikkô National Park, on May 13, 1974.

Remarks. The following five species of the genus *Testudacarus* (Torrenticolidae) have hitherto been reported since the establishment of the genus by C. Walter, 1928: *T. tripeltatus* Walter, 1928, female from India; *americanus* Marshall, 1943, female and *minimus* Marshall, 1943, male, and *vulgaris* Habeeb, 1954, male and female, all from North America, and *japonicus* Imamura, 1955, male, from

Mishima, Japan. The present new species resembles the North American species, *americanus*, but smaller in body size and the dorso-lateral shields are smaller. This new species is also distinguished from the Indian species, *tripeltatus*, by the smaller dorso-lateral shields. The female of *okadai* n. sp. is also clearly distinguished from the Japanese species, *japonicus*, from Mishima by the feature of the venter.

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